UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Colonel Andrew W. Backus
U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

12 NOV 2010

Re: PN NAO- 2006-05999 Paramont Coal Company Virginia, LLC, Doe Branch Surface Mine, Dickenson County, Virginia

Dear Colonel Backus:

The U.S. Environmental Protection Agency (EPA) has reviewed the public notice for Paramont Coal Company Virginia's (PCCV), Doe Branch Surface Mine located near the community of Haysi, Dickenson County, Virginia. EPA's review and comments, herein provided, are based upon the Public Notice posted on October 1, 2010 and the Joint Permit Application (JPA) dated September 2, 2010. EPA's review is intended to ensure that the proposed project meets the requirements of the Clean Water Act (CWA). The CWA Section 404(b)(1) Guidelines (40 C.F.R. Part 230) provide the substantive environmental criteria against which this application must be considered. Fundamental to the Guidelines is the premise that no discharge of dredged or fill material may be permitted if: (1) it causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable state water quality standard; (2) a practicable alternative to the proposed discharge exists that would have a less adverse impact on the aquatic environment; or (3) the discharge would cause or contribute to significant degradation of the waters of the United States.

Project Description and Baseline Information

The proposed site is located approximately 10 river miles upstream from the Kentucky state line. The project consists of land disturbance of approximately 1,084 acres, including 616 acres that have been previously mined. The applicant's stated project purpose is to mine 4.5 million tons of coal from the Clintwood, Blair and Eagle seams over 15 years. The applicant proposes five hollow fills, five in-stream sediment ponds, and thirteen upland sediment ponds. Approximately 240 acres of the proposed project have received State Surface Mining Control and Reclamation Act (SMCRA) and CWA Section 402 National Pollutant Discharge Elimination System (NPDES) authorizations by the Virginia Division of Mined Land Reclamation (VDMLR). The remaining portion is currently under review by the VDMLR. The proposed impacts are to streams in the Barts Lick Creek and the Russell Prater Creek watersheds that drain to the Russell Fork of the Upper Levisa Fork River. The project proposes to impact 2.42 acres of jurisdictional wetlands and 16,330 linear feet of stream channel including permanent impacts to

10,090 linear feet of stream from the placement of the hollow fills and mine-through activities, and 6,240 linear feet of stream from the placement of in-stream sediment ponds. The impacts to jurisdictional wetlands result from mine-through activities.

Russell Fork is on Virginia's 303(d) list for impaired waters due to elevated levels of E. coli. Russell Prater Creek has an approved Total Maximum Daily Load (TMDL) from the head waters to the confluence with Russell Fork for both Total Suspended Solids (TSS) and Total Dissolved Solids (TDS). Russell Prater Creek was initially listed in 1996 for impairments to benthic macroinvertebrates caused by coal mining. The Levisa Fork watershed has a draft TMDL for aquatic life use, E. Coli, and tPCB. The applicant stated in the JPA that a TMDL offset proposal is associated with the VDMLR Application #1005467. It is unclear whether the offset proposal is for TSS, TDS, or both. The offset proposal was not provided in the JPA for our review. To the extent that the offset proposal may be proposed for minimization or mitigation, EPA requests that the applicant provide the TMDL offset proposal for our consideration in the review of this proposed project.

The applicant provided baseline data in the JPA including Rapid Bio-assessment Protocol (RBP) scores using Eastern Kentucky Stream Assessment Protocol (EKSAP) for the stream reaches proposed to be directly impacted and water chemistry data for those reaches. Biological monitoring data provided by the applicant were collected on stream reaches located downstream of the project area. EPA requests benthic data for the stream reaches proposed to be impacted. The Virginia Stream Condition Index (VASCI) scores ranged from 31 to 57 (out of 100) and indicate the majority of the stream segments are under "severe stress". The RBP scores provided ranged from 96-146 indicating that the habitats at nearly all of the sampling stations are of good quality. The water chemistry data shows that the proposed impacted streams to generally range in average from 148-402 µS/cm over the sampling period, and the downstream receiving streams to generally average from 465-780 µS/cm over the same sampling period. However, EPA's review of the information provided in the JPA has identified concerns with data quality. Specifically, EPA found inconsistencies and flaws in the benthic monitoring metric calculations. Furthermore, based on the raw data forms included in the JPA, EPA is concerned the applicant may not have used appropriate sampling protocol for baseline benthic monitoring as required by VASCI. As submitted, the forms appear to indicate that VASCI scores were improperly derived from EKSAP methods. EPA requests the applicant review the RBP forms and conduct additional benthic sampling, as needed, in all streams including the streams proposed to be impacted utilizing the correct protocol for VASCI. In addition EPA requests macroinvertebrates be identified to the genus level and the raw data provided for review.

Despite the volume of information provided by the applicant in the JPA, it lacks important information and evaluations for EPA to complete its assessment of the project for compliance with the CWA Section 404(b)(1) Guidelines. Besides the data quality concerns identified above, EPA's review has identified areas of concern including the alternatives analysis, potential to cause or contribute to significant degradation, cumulative impacts, and the proposed mitigation.

Alternatives Analysis – 40 CFR 230.10(a)

According to the Section 404(b)(1) Guidelines, a discharge of dredged or fill material should not be permitted if there is a practicable alternative that would have less adverse impacts on the aquatic environment, so long as the alternative does not have other significant adverse environmental consequences. The applicant's alternative analysis provided in the JPA is separated into two levels. The first level analyzes different mining methods for recovering coal. The second level analyzes spoil handling and fill placement while recovering 4.5 million tons of coal. The mining methods examined by the applicant include single cut contour, mountain top removal, deep mining, the preferred alternative of contour-area mining of multiple seams, and the no build alternative. The second level of the alternatives analysis focuses on minimization of spoil placed in jurisdictional waters and includes three action alternatives that vary the impacts, the preferred alternative, and the no build option. The applicant utilizes fill methodologies in accordance with VDMLR regulations for the three action alternatives, whereas the preferred alternative utilizes KY RAM#145 for fill design. The impacts of the alternatives range from eight valley fills, to the preferred alternative of 5 valley fills which focuses on avoidance by reducing impacts through spoil hauling onsite. There was limited consideration and evaluation of off-site disposal areas.

While the applicant's preferred alternative has shown minimization efforts in the mine plan by hauling spoil on site, reducing the number of in-stream sediment ponds, and utilizing KY RAM #145; EPA believes the alternatives analysis was too limited in scope and focuses exclusively on recovering 4.5 million tons of coal. In fact, the action alternatives are all handling the same amount of material from the mining cuts and spoil. EPA recommends that the alternatives analysis include a detailed analysis of additional considerations of practicable operations that would allow for the recovery of coal while further minimizing impacts to jurisdictional waters. A more detailed discussion of a full range of practicable alternatives should be provided.

Generally, EPA believes that high spoil-to-coal ratio mining operations do not represent the least environmentally damaging alternative. EPA recommends additional evaluation of the project to identify opportunities through more efficient mining methods, and materials handling that would further reduce stream impacts and the number of valley fills while reducing the ratio of spoil to coal. Examples include an analysis of utilizing side-hill fills to remain out of jurisdictional areas, the use of over stacking above approximate original contour (AOC) where practicable, and fully evaluating the use of abandoned mine land features adjacent to the proposed mine. In addition, an alternatives analysis should incorporate a comparison of the alternatives on the linear extent of aquatic impacts per ton of spoil. As submitted, the applicant's alternatives analysis does a poor job of evaluating improved mining ratios because, as described above, it evaluated changes in neither the amount of coal recovered nor the amount of spoil generated.

The alternatives analysis provided in the JPA did not discuss alternative construction techniques or best management practices to protect water quality and prevent significant degradation of the aquatic ecosystem. Stream impacts should be avoided to the maximum extent practicable and incorporate effective materials handling plans and fill construction techniques to address minimization of water quality impacts. Spoil placement should be controlled to reduce drainage through overburden into streams, i.e. construction of valley fills on the up-dip side of the project or increased compaction of lifts. As discussed below, potential water quality impacts from surface coal mining operations are a significant concern. Therefore EPA recommends that the applicant address in the alternatives analysis the "sequencing" of the construction of the valley fills, or other similarly protective measures, to help ensure demonstrated compliance with water quality standards and prevention of significant degradation in all stages of the mining operation. In this context, the term "sequencing" refers to the construction of one valley fill at a time combined with a thorough monitoring plan to demonstrate that construction has not caused or contributed to significant degradation and/or an excursion from applicable water quality standards before the applicant proceeds to the construction of the next valley fill.

Compliance with Other Environmental Standards – 40 CFR 230.10(b)/Significant Degradation of the Aquatic Ecosystem – 40 CFR 230.10(c)

40 C.F.R. Section 230.10(b)(1) of the CWA Section 404(b)(1) Guidelines states that "[n]o discharge of dredged or fill material shall be permitted if it . . . [c]auses or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard." The Guidelines, at 40 C.F.R. Section 230.10(c) also prohibit any discharge of dredged or fill material that would cause or contribute to significant degradation of the waters of the United States. EPA is concerned that the applicant has not demonstrated that the project as proposed will comply with Sections 230.10(b) and (c).

The best scientific information available to EPA, including published, peer-reviewed studies, indicate that surface coal mining activities like those proposed by the applicant are strongly related to downstream biological impairment. These studies show that surface mining impacts on aquatic life are strongly correlated with ionic strength in Central Appalachian streams. Increased conductivity has the potential to adversely impact aquatic life use, is persistent over time, and has not been demonstrated to be easily mitigated after-the-fact or effectively treated once mining begins. These impacts can rise to a level of significant degradation and/or may result in a violation of Virginia's narrative water quality standard. Conductivity is a measure of the ionic strength within the water that represents the levels of total dissolved solids (TDS) and salinity in the water column. In the Russell Prater TMDL, Virginia used a reference stream approach, and established a level of 334 mg/L as the endpoint for TDS in the Russell Prater watershed, which represents Virginia's interpretation of its narrative standard in the absence of a numeric standard. This level of TDS roughly corresponds with a specific conductivity level of 500 µS/cm, and appears to be consistent with the best available scientific information described above.

The applicant provided limited baseline water quality and biological monitoring data for the streams that are proposed to be impacted in addition to downstream receiving waters, as identified above. Such baseline data should be provided for all waters on the proposed site as well as downstream receiving waters. The conductivity baseline levels submitted in the supplemental information show generally the directly impacted streams to range in conductivity averages of 148-402 µS/cm, and the downstream receiving streams to range in conductivity averages of 465-780 µS/cm. Based on our review of the data provided, it appears that streams on-site with low levels of conductivity are providing important dilution effects to the receiving streams. If constructed as proposed, the fills will alter the hydrologic flows, may remove the dilution potential, and likely become a source of increased in-stream conductivity. To evaluate the likely water quality impacts from this project, EPA requests baseline and recurring monitoring data and discharge information from adjacent mines. This monitoring data may inform an assessment of the potential environmental effects of the proposed operation.

To the extent the applicant believes site-specific conditions demonstrate that elevated levels of conductivity are consistent with meeting the State's water quality standards, the applicant should supply a reasonable potential (RP) analysis in addition to an analysis of the ionic matrix and whether the discharge is dominated by calcium, magnesium, bicarbonate and sulfate and low in chloride. Where in-stream background conditions are limestone-dominated, that also should be noted. In addition, the applicant should provide an analysis, based on the macroinvertebrate data submitted as part of the permit application, of whether the native aquatic community is similar to that studied in *"A Field-based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams"*, and in Pond, G.J., M. E. Passmore, F.A. Borsuk, L. Reynolds, and C. J. Rose. 2008, *Downstream effects of mountaintop coal mining: comparing biological conditions using family- and genus-level macroinvertebrate bioassessment tools*, J. N. Am. Benthol. Soc. 27(3):717–737. Any analysis based on differences of the native aquatic community should include a review of taxa (at the genus level) at applicable reference sites within the region.

To help ensure that the project will not cause or contribute to water quality excursion or contribute to significant degradation, EPA recommends that the applicant develop and provide a detailed monitoring plan, to be incorporated into any permit issued as special conditions, which includes water quality and biological monitoring in streams below the project during and post operation/construction. At a minimum, the plan should monitor for specific conductivity, total dissolved solids, sulfates, bicarbonates, chlorides, pH, selenium, magnesium, potassium, calcium, and sodium. An adaptive remedial action plan should also be developed to address increases in conductivity and any other parameters of concern which would be implemented if water quality protection values are exceeded. The adaptive management plan should be developed by the applicant at time of permit issuance and should include multiple trigger points to ensure that remedial actions are initiated in advance of water quality impacts reaching levels associated with a violation of water quality standards or significant degradation.

Minimization and Compensation for Unavoidable Impacts – 40 CFR 230.10(d) and 230.91

The applicant has proposed a mitigation plan that includes stream restoration of temporary impacts below valley fills, stream re-establishment onsite for impacts resulting from mine through, restoration and enhancement of streams on an adjacent underground mine site, and the creation of jurisdictional waters along the hollow fill groin ditches. The applicant is proposing to use Natural Stream Design approach for the stream mitigation. The proposed wetland mitigation will be accomplished by conversion of in-stream sediment ponds. As mining operations progress, mitigation would begin a minimum of two years after mining has been completed onsite once revegetation has occurred and VDMLR allows for removal of in-stream sediment ponds. The timing of the offsite mitigation is not discussed in the plan and EPA requests that such additional information be provided. This portion of the mitigation is on an unnamed perennial tributary to Barts Lick associated with PCCV's adjacent Cherokee Deep Mine. Additional restoration will occur on Doe Branch main channel below the sediment pond. The applicant proposes to use ecological integrity index scores from baseline monitoring and Stream Compensation Ratio Calculators to determine necessary mitigation. These calculations and the raw data for the entire mitigation proposal should be provided in an updated compensatory mitigation plan (CMP) for review.

EPA is unaware of any evidence demonstrating that the use of groin ditches for on-site stream creation has successfully replaced the lost ecological functions of stream channels such as those proposed to be impacted by this project. It is EPA's recommendation in this case that no Section 404 compensatory mitigation credit should be given for groin ditches or for streams created from these ditches. EPA suggests the applicant develop a robust comprehensive mitigation plan that adequately compensates for all lost functions of the impacted stream channels. Additionally, EPA recommends a detailed discussion in an updated CMP of the suitability of stream mitigation for the reaches associated with the Cherokee Deep Mine. This discussion should include current conditions of the reach, need for restoration, and if applicable, the mitigation required for any Section 404 permit that may have been issued for the Cherokee Mine.

EPA recommends that stream functional assessment information be provided, which includes biological, chemical and physical components for waters that will be impacted. Such information is not currently included in the permit application. This information is critical for ensuring that both stream structure and function are assessed for impacted streams, which is an existing regulatory requirement and has been identified as a priority for both EPA and the Corps as articulated in a July 30 joint memorandum. Without this information, it cannot be determined if the applicant's proposed mitigation adequately replaces lost stream functions. In addition, EPA recommends that the permit include success criteria based upon observable and measurable benchmarks for water chemistry and biological function and a timeframe within which the benchmarks must be achieved, consistent with EPA and the Corps's 2008 compensatory mitigation rule. At present, the proposed compensatory mitigation plan for restored reaches does not include using water chemistry nor agreed to biological parameters as measurements for

success. Limited physical criteria, such as RBP scores, are currently proposed to determine mitigation success. The applicant has offered limited macroinvertebrate data from sites within the area to compare to post mitigation sampling for success criteria. Further specific information on the biological monitoring should be submitted and agreed to by the Corps and EPA. EPA requests the opportunity to review and provide further comments as this plan is further developed.

Determination of Cumulative Effects on the Aquatic Ecosystem – 230.11(g)

The Section 404(b)(1) Guidelines require consideration of cumulative impacts: "Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of the existing aquatic ecosystem." There are impacts within the Russell Prater and Barts Lick 12 digit HUC (hydrologic unit code) sub-basin in Virginia due to mining activities which may be significant when assessed cumulatively. According to the Russell Prater TMDL, as of 2006 there were 101 sediment basin outfalls discharging from surface mining operations within the Russell Prater Creek watershed. Approximately 754 acres of the project are within the Barts Lick watershed. Taking into account the previously mined acres within this site and watershed, the proposed project would impact an additional 400 acres of land that have not been previously mined. Historical and current mining estimates provided indicate that 1,340 acres or 17% of the watershed have been impacted. The addition of this proposal would raise the impact level to approximately 22.3% of the watershed. At the time of the JPA submission, another mine was being proposed in the Barts Lick watershed that would impact an additional 93 acres. Approximately 330 acres of this proposed project are within the Russell Prater watershed. Taking into account the previously mined acres within this site and watershed, the proposed project would impact an additional 111 acres of land that have not been previously mined. Historical and current mining estimates provided by the applicant indicate that 4,964 acres or 30% of the watershed have been impacted. The addition of this proposal would raise the impact level to 31% of the watershed.

Given the past, present, and proposed future mining activities within the Levisa watershed within Virginia, EPA recommends that the Corps conduct a thorough cumulative effects analysis that includes a detailed presentation of past, present and reasonably foreseeable activities. The analysis should describe the current state of the watershed, and consider affects on the ecosystem and human environment including impacts to the subwatershed from filling of streams and potential impacts to private drinking water wells and other drinking water supplies. This analysis should consider, at a minimum, the ecosystem function and habitat, and the effects of the hydrologic modifications to the sub-basin and subwatershed. It should also address the impact of deforestation and development on water quality, water quantity, and other ecological conditions within the sub-basin and subwatershed. We strongly suggest an approach that would manage and link proposed projects to overall water quality and habitat changes on a sub-basin and subwatershed basis.

Finally, consistent with Executive Order 12898 entitled "Federal Actions to Address Environmental Justice In Minority Populations and Low-income Populations" and the accompanying Presidential Memorandum, EPA recommends that the Corps' Section 404(b)(1) Guidelines and NEPA reviews analyze the potential for disproportionate effects on low-income or minority populations in the area of Doe Branch Surface Mine. The Doe Branch Surface Mine is located in a Census block group where 29.27% of the population lives in poverty. Moreover, 21.8% of the residents of Dickenson County live below the poverty line, which is more than twice the Virginia state average of 10.2%. Accordingly, additional analysis of the potential for disproportionately high and adverse effects on these low-income populations should be conducted. An appropriate characterization of the economic status of residents near the site and the conditions they face would include any effects relating to the proximity of the blasting zone, locations of discharges of fill material, truck traffic, noise, fugitive dust, and habitat loss. Additional consideration should also be given to the potential impacts of these activities on subsistence fishing, hunting, foraging and gardening in the area. Additional information is needed concerning sources of drinking water for the affected population (including municipal water supplies and private sources of drinking water including streams and/or wells). Specifically, according to the 2000 U.S. Census, there are 18 households located in the block group which contains the Doe Branch Surface Mine that do not have plumbing. This suggests these residents rely on nearby streams for sources of drinking water. Special consideration should be given to the effects the Doe Branch Surface Mine will have on these populations. EPA also recommends that steps be taken to ensure meaningful engagement of affected communities in the permitting process for this project, such as identifying opportunities to share details of the proposed project with affected communities more robustly than through traditional public notice processes. EPA would be willing to assist in identifying possible additional opportunities to involve affected communities in permit decision-making.

Conclusion

EPA believes that the project as currently proposed may not comply with the Section 404(b)(1) Guidelines, that the project may adversely affect water quality and result in significant degradation to the aquatic ecosystem, and that modifications to the proposed project and the permit application need to be considered to address such impacts. In light of these concerns, EPA believes that the project may result in substantial and unacceptable impacts to aquatic resources of national importance, as covered in Part IV, paragraph 3(a), of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army. In addition, we believe it may be appropriate for the Corps to prepare an Environmental Impact Statement (EIS). As you make your determination whether to prepare an EIS, we recommend that you consider the large scale nature of the proposed project's impacts, e.g., the loss of nearly three miles of stream habitat and the construction of five valley fills. In addition, it is not clear that the mitigation proposal, as currently drafted, would serve as a basis for supporting a Finding of No Significant Impact. We would appreciate the opportunity to

discuss with you this issue of whether an EIS should be prepared, as well as our other concerns with the permit application.

Thank you for the opportunity to provide comments on the proposed Doe Branch Surface Mine. Should you have any questions please feel free to contact Mark Douglas at 215-814-2767 or by email at douglas.mark@epa.gov.

Sincerely,

John R. Pomponio, Director
Environmental Assessment and Innovation Division